



Because Racecar



HIGH SPEED KARLSRUHE

mplayer F-106.mp4



Happy Birthday



HIGH SPEED KARLSRUHE



- Was ist Formula Student
- Anekdoten und cooles Zeug mit Tobias Pletschke
- Die Ankunft in der Analogen Welt, EMV Probleme und induktive Lasten
- Echtzeit auf dem Infineon XC878, einem 8052 Controller - There be Dragons!!11!!











LOCTITE
TITAN
SANTLER

H5
KDERLER
Autolackierung GmbH
Institute
of Materials
and Processes
euro
engineering
Bosch Engineering
BOSCH
Invented for life

Infineon

SCHAUZ + BOKENBACH

UAS KARLSRUHE

IVECO MOTOR

SCHAEFFLER GRUPPE
FAB
vector

E/3

E/3















Safety First



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Online Flash



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Ladies and Gentleman, so eben kann ich meinen ersten non-blocking flash write bestätigen. Das ist die Grundvoraussetzung für per CAN Bus konfigurierbare Elektronik.

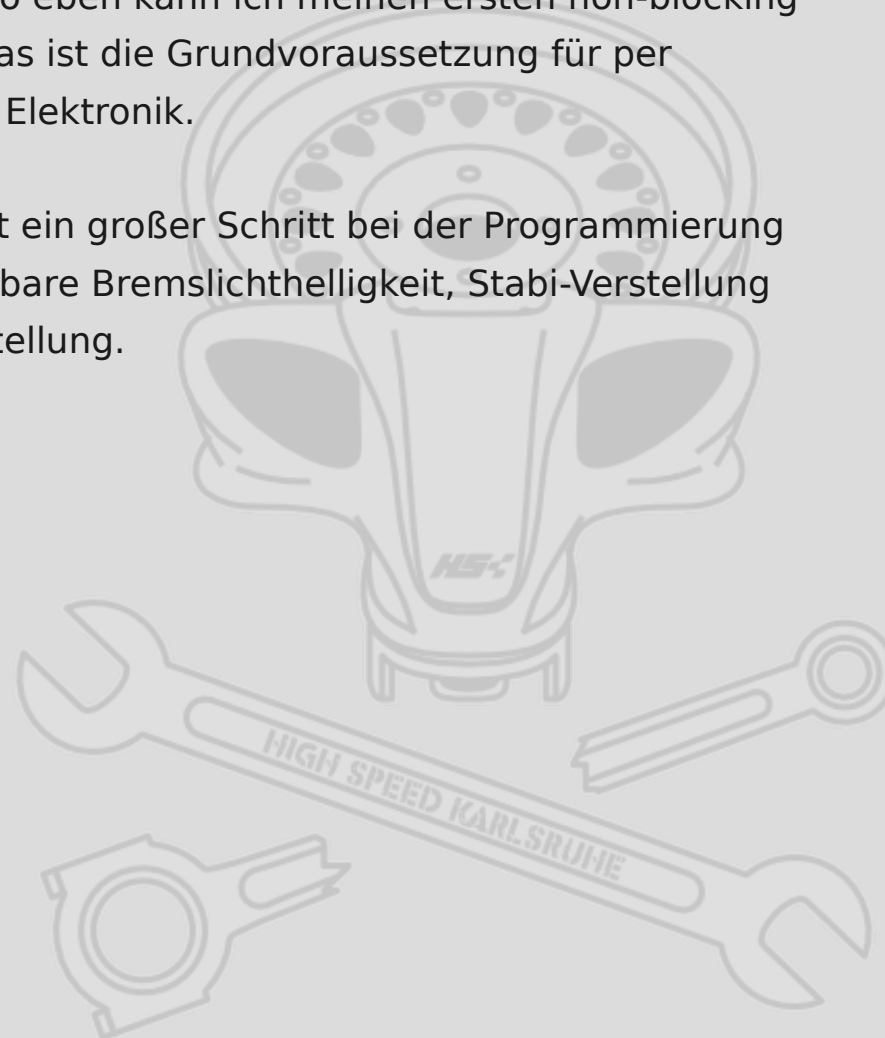
Oder auf Deutsch, das ist ein großer Schritt bei der Programmierung von Features wie einstellbare Bremslichthelligkeit, Stabi-Verstellung oder Bremsbalance-Verstellung.

Gruß,
Dominic

--

Dominic Fandrey

Teamleiter Electronics



Dann fahr' doch mit Vergaser!



- Weiter geht's in Eagle



8052/XC878



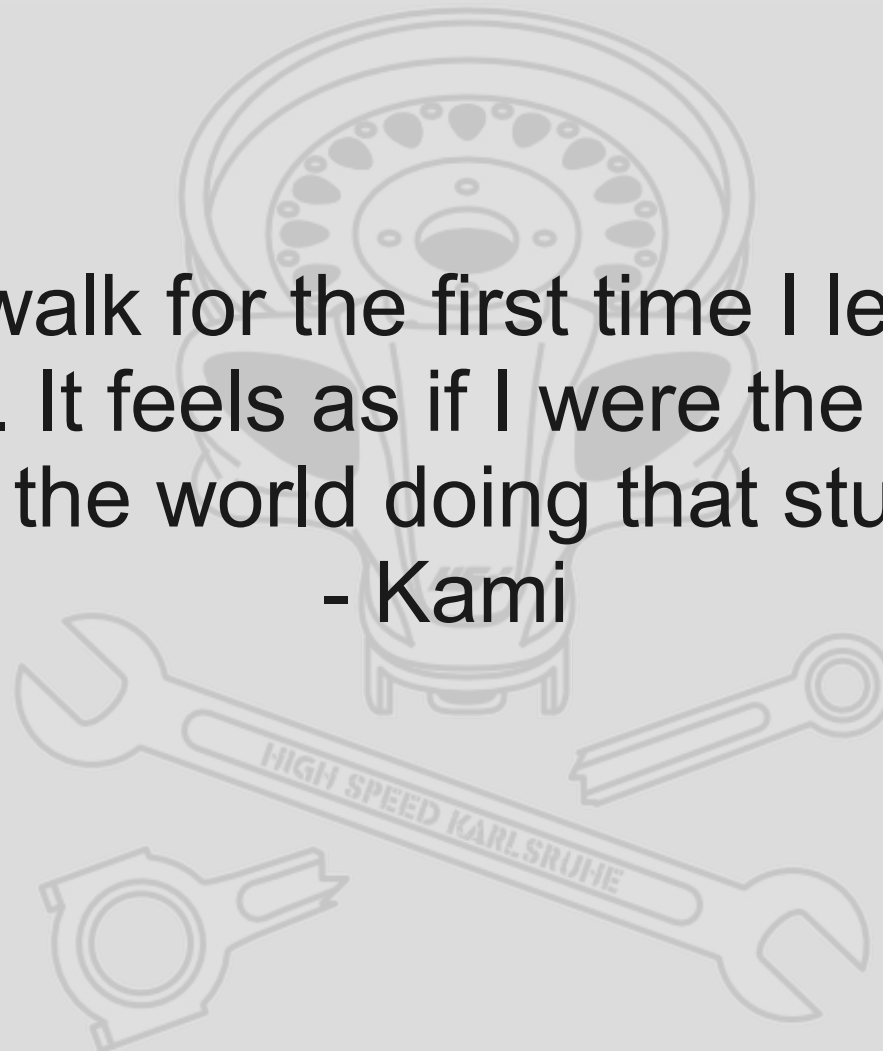
HIGH SPEED KARLSRUHE

- Fallstricke
- Speicher
- $V_i, v_i, v_i \dots m$
- CANdb++



Wherever I walk for the first time I leave a trail of bug reports. It feels as if I were the only person in the world doing that stuff.

- Kami



bugs.xc878_um_1_1



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A screenshot of a web browser window showing a forum thread. The browser's address bar displays the URL 'http://www.infineonforums.com/threads/107-User-Manual-Issues'. The forum post is by a user named 'kamikaze', who has an 'Intermediate' status. The post title is 'User Manual Issues'. The content of the post discusses a collection of user manual issues and lists several specific bugs found in the XC878 UM 1.1 manual, including errors in register descriptions, bit definitions, and table entries. The post is dated 'Apr 26th, 2012 04:05 PM' and is the first post in the thread (#1).

Apr 26th, 2012 04:05 PM #1

kamikaze Intermediate

Join Date: Nov 2011
Location: /Europe/Germany /Karlsruhe
Posts: 40
Points: 317.5

User Manual Issues

We have an internal collection of user manual issues. Issues means things that aren't clear to us (from descriptions in the manual) or plain wrong.

I thought it might be convenient (for μ C users as well as developers) if all such findings are collected in a single place. Just post the μ C user manual issues you found therein:

I will try to keep a list of all posted issues up to date in this first post of the thread.

XC878 UM 1.1

- (Section 7.3.4) The PLLBYP bit is write protected, this is not documented in the OSC_CON register description
- (Section 5.6.3) IRCON2 lists bit CANSRC3 at bit 3, all other sources place it at bit 4
- (Table 16-5) Everything is plain wrong, e.g. PANCTR is listed at address 0x01C4, but the correct address is 0x0071, I haven't found a single correct address or offset in that table
- (Table 4-5) Lists FEAH as FEAL
- (Section 4.9) FCS.FTOV bit mentioned in section 4.4 does not exist

bugs.C51



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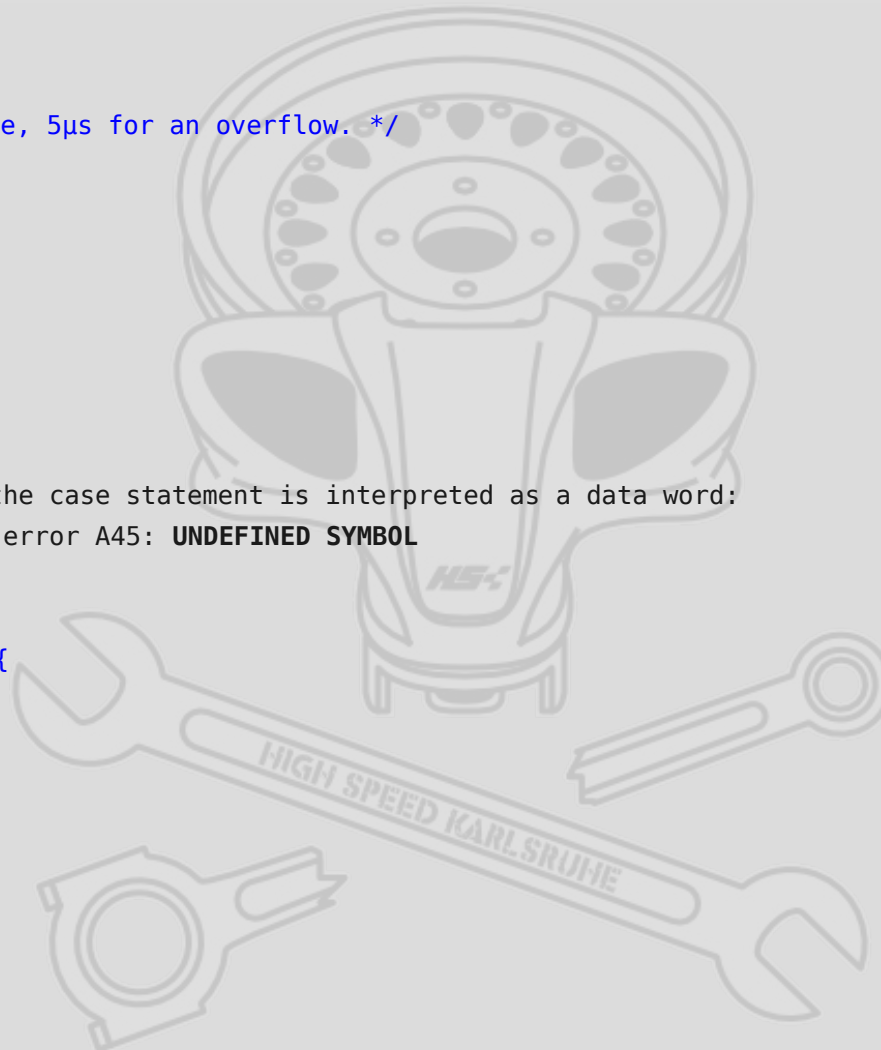
```
switch(state) {  
case STATE_WRITE:  
state_write:  
    /* Set program flash timer mode, 5µs for an overflow. */  
    FTVAL &= ~(1 << BIT_MODE);  
    [...]  
    if (something happens) {  
        goto state_write;  
    }  
    [...]  
}
```

This fails, the symbol next to the case statement is interpreted as a data word:

..\bin.c51\hsk_flash.src(1060): error A45: **UNDEFINED SYMBOL**

The SRC lines:

```
1055:; switch(hsk_flash.state) {  
1056:    ; SOURCE LINE # 437  
1057:MOV    DPTR,#hsk_flash+0BH  
1058:MOVX   A,@DPTR  
1059:LCALL  ?C?CCASE  
1060:DW     state_write
```



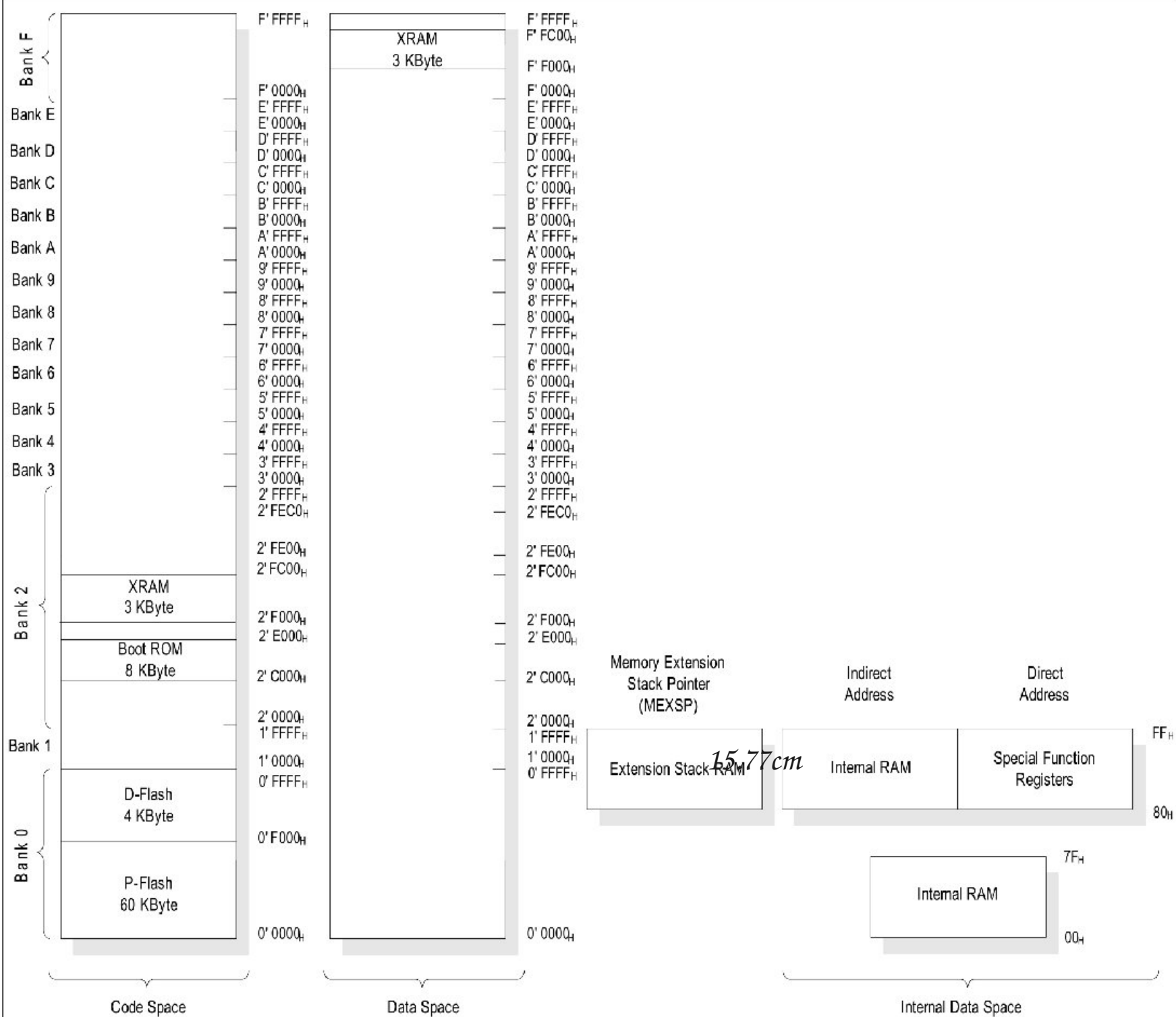
Mortal Combat



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mplayer Dave3.mp4





xc878.mem



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```
main.mem (~:/dev/hg1/highspeed/hsc_kbs/mem.sd.r) - VIP
Internal RAM layout:
  0 1 2 3 4 5 6 7 8 9 A B C D E F
0x00: |0|0|0|0|0|0|0|0|a|a|a|a|a|c|c|
0x10: |c|c|c|c|c|c|c|c|c|c|c|d|d|d|
0x20: |B|B|B|T|b|b|b|b|b|b|b|b|b|b|
0x30: |b|b|b|b|b|b|b|b|e|e|e|e|f|f|
0x40: |f|f|f|f|f|f|f|g|g|g|g|Q|Q|Q|
0x50: |Q|Q|Q|Q|Q|Q|Q|Q|I|I|I|I|I|I|
0x60: |I|I|I|I|I|I|I|I|I|I|I|I|I|I|
0x70: |I|I|I|I|I|I|I|I|I|I|I|I|I|I|
0x80: |I|I|I|I|I|I|I|I|I|I|I|I|I|I|
0x90: |I|I|I|I|I|I|I|I|I|I|I|I|I|I|
0xa0: |I|I|I|I|I|I|I|I|I|I|I|I|I|I|
0xb0: |I|I|I|I|I|I|I|I|I|I|I|I|I|I|
0xc0: |I|I|I|I|I|I|I|I|I|I|I|I|I|I|
0xd0: |I|I|S|S|S|S|S|S|S|S|S|S|S|S|
0xe0: |S|S|S|S|S|S|S|S|S|S|S|S|S|S|
0xf0: |S|S|S|S|S|S|S|S|S|S|S|S|S|S|
0-3:Reg Banks, T:Bit regs, a-z:Data, B:Bits, Q:Overlay, I:iData, S:Stack, A:Absolute

Stack starts at: 0xd2 (sp set to 0xd1) with 46 bytes available.

Other memory:
  Name          Start    End      Size    Max
  -----
  PAGED EXT. RAM      0        256
  EXTERNAL RAM    0xf000  0xf11c   285    3072
  ROM/EPR0M/FLASH  0x0000  0x4393 17300  65536

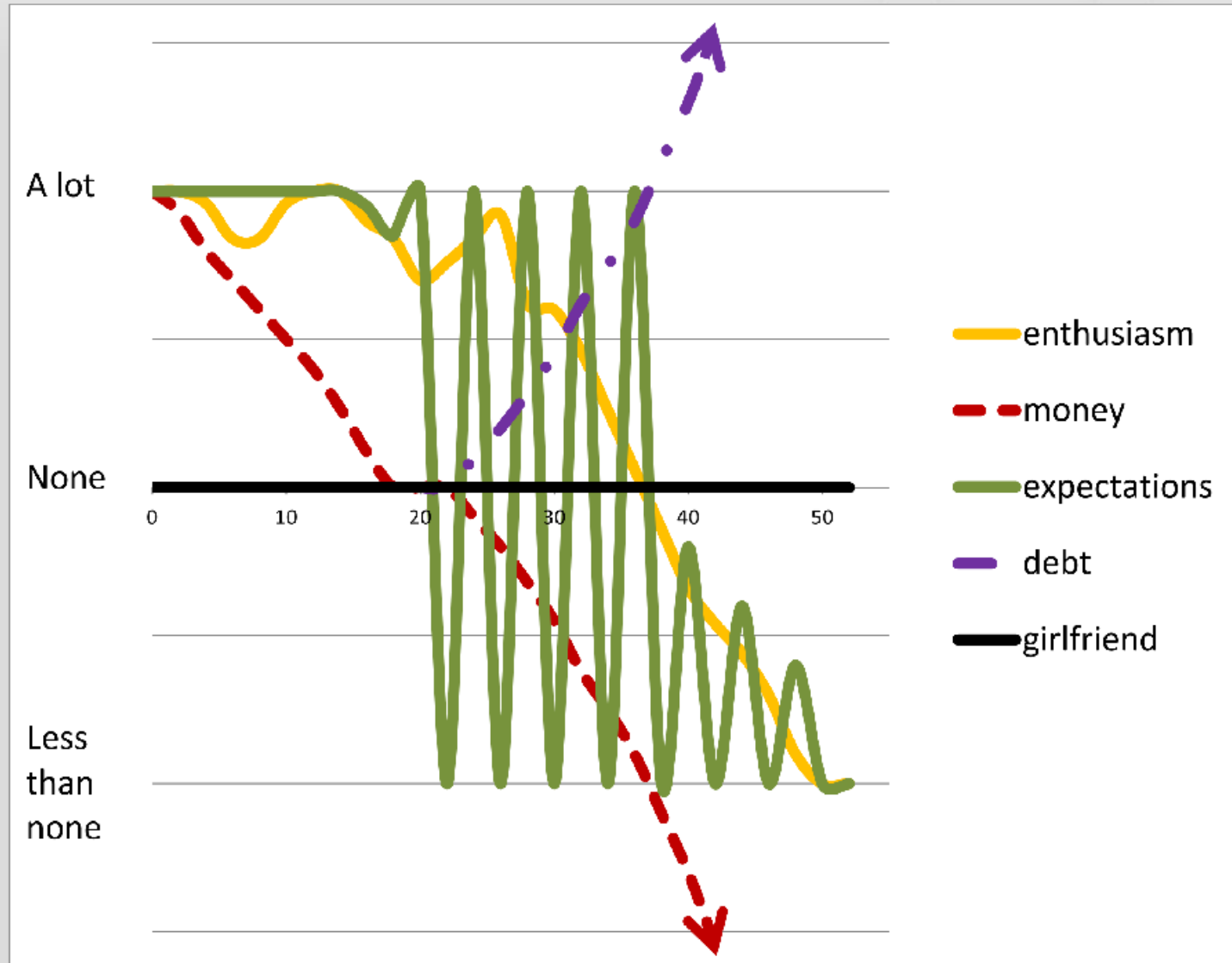
                                     1,1      All
```

- Racecar: Searching for the Limit in Formula SAE
 - <http://www.superfastmatt.com/2012/01/free-racecar>
- Pat's Corner
 - <http://www.formulastudent.de/academy/pats-corner>
- High Speed Karlsruhe
 - <http://www.youtube.com/user/HighSpeedKarlsruhe>
 - <http://wiki.highspeed-karlsruhe.de/start>

Project Timeline



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Superfast Matt



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People wonder why we are obsessed and we wonder why they're not. Someone asks us why we spend 70 hours a week building a racecar and we just look at them like a dog looks at a mime.

Why? What do you mean, Why?
Because racecar.
That's why.